

REMARKS

STATUS OF CLAIMS:

Claims 28-37 have been pending.

Claims 28-33 are rejected under 35 USC 102(e) as being anticipated by Kim et al., US Patent No. 6,256,001, hereinafter "Kim."

Claims 34 is rejected under 35 USC 102(e) as being anticipated by Iseki et al., US Patent No. 6,648,487, hereinafter "Kim."

Claims 35- 37 are objected to for being allowable if amended into independent form.

In accordance with the foregoing, claims 29, 30 and 34-37 are cancelled without prejudice or disclaimer, claims 38-51 are added and the claims are amended, and, thus, the pending claims remain for reconsideration, which is respectfully requested.

No new matter has been added.

The Examiner's rejections are respectfully traversed.

PRIORITY:

Enclosed concurrently herewith submit a verified English language translation of the certified priority Japanese Patent Application No. 9802166, filed December 28, 1998, in accordance with the requirements of 37 C.F.R. §§ 1.55. Therefore, foreign priority date of the present application is perfected, overcoming the effective filing date of Iseki, October 27, 1999. Accordingly, Applicants respectfully submit that the Iseki reference no longer qualifies as a prior art reference.

CLAIM REJECTIONS:

Independent claim 28 is allegedly anticipated by Kim.

In accordance with the foregoing, claim 28 is amended to recite:

A method for driving a plasma display panel device having first and second electrodes spaced apart from one another, and performing a display by applying voltage pulses to the first and second electrodes performing a display by applying drive voltage to first and second electrodes, which are spaced apart from one another, comprising, during a sustain period:

applying a second voltage having positive polarity to the second electrodes while applying a first voltage having negative

polarity to the first electrodes; and

applying the first voltage having negative polarity to the second electrodes while applying the second voltage having positive polarity to the first electrodes,

wherein after the first voltage is applied to the first electrodes, a third voltage is applied to the first electrodes different from the first and second voltages and a ground potential, and thereafter the second voltage is applied to the first electrode, and

the second electrodes are applied with the second voltage, thereafter the third voltage, and thereafter the first voltage.

Support for the claim amendment can be found, for example, in FIGS. 6A and 7A.

The Office Action relies upon claim 4 of Kim in rejecting the claims. As seen in Fig. 4 of Kim, during the sustain period, the voltage along the X and Y electrodes alternates between V_s and $-V_k$. Thus, Kim discloses applying only two voltages V_s and $-V_k$.

In contrast, claim 28 recites, in part, "wherein after the first voltage is applied to the first electrodes, a third voltage is applied to the first electrodes different from the first and second voltages and a ground potential, and thereafter the second voltage is applied to the first electrode, and the second electrodes are applied with the second voltage, thereafter the third voltage, and thereafter the first voltage."

Applicants respectfully submit that an anticipation rejection cannot be based upon Kim, because Kim fails to disclose, either expressly or inherently, the claimed "wherein after the first voltage is applied to the first electrodes, a third voltage is applied to the first electrodes different from the first and second voltages and a ground potential, and thereafter the second voltage is applied to the first electrode, and the second electrodes are applied with the second voltage, thereafter the third voltage, and thereafter the first voltage," as recited in claim 28, because Kim merely discusses two voltages, V_s and $-V_k$ and Kim does not necessarily provide the claimed "a third voltage is applied to the first electrodes different from the first and second voltages and a ground potential."

Dependent claims 31-33 recite patentably distinguishing features of their own or are at least patentably distinguishing due to their dependence from the independent claims.

Withdrawal of the rejection of pending claims and allowance of pending claims is respectfully requested.

NEW CLAIMS:

New claim 38 is directed to a method of driving a plasma display panel device, including:

applying the drive voltages in drive periods, including a reset period, and address period, and a sustain period;

wherein in the sustain period,

a second voltage having positive polarity is applied to the second electrodes while a first voltage having negative polarity is applied to the first electrodes, and

the first voltage having negative polarity is applied to the second electrodes while the second voltage having positive polarity is applied to the first electrodes,

wherein in the reset period or the address period,

a reference voltage is applied to the first and second electrodes and an address voltage is applied to the third electrodes, the reference voltage being equal to the first voltage having negative polarity or the second voltage having positive polarity, and the address voltage being equal to the second voltage having positive polarity.

Support for claim 38 can be found, for example, in FIG. 18 (the first voltage ($-V_{my}$) and the second voltage ($+V_a$)).

Applicants respectfully submit that Kim at least fails to disclose, either expressly or implicitly, the claimed "a reference voltage is applied to the first and second electrodes and an address voltage is applied to the third electrodes, the reference voltage being equal to the first voltage having negative polarity or the second voltage having positive polarity, and the address voltage being equal to the second voltage having positive polarity," as recited in claim 38, because, as discussed above, Kim only discusses applying two voltages of V_s and $-V_k$, and is silent on any of the claimed "reference voltage."

New dependent claim 39 recites patentably distinguishing features of its own or is at least patentably distinguishing due to its dependence from the independent claim 38. Support for claim 39 can be found, for example, in FIG. 18.

New claim 40 is directed to a method of driving a plasma display panel, including:

applying the drive voltages in drive periods, including a reset period, and address period, and a sustain period;

wherein in the sustain period,

a second voltage having positive polarity is applied to the second electrodes while a first voltage having negative polarity is applied to the first electrodes,

the first voltage having negative polarity is applied to the second electrodes while the second voltage having positive polarity is applied to the first electrodes,

the first electrodes are applied with the first voltage, thereafter a third voltage is applied to the first electrodes different from the first and second voltages and a ground potential, and thereafter the second voltage is applied to the first electrode, and

the second electrodes are applied with the second voltage, thereafter the third voltage, and thereafter the first voltage,

wherein in the reset period or the address period,

a reference voltage is applied to the first and second electrodes and an address voltage is applied to the third electrodes, the reference voltage being equal to the third voltage.

Support for new claim 40 can be found, for example, in FIGS. 20 and 11 (the reference voltage (-Vs1, +Vs1)).

Applicants respectfully submit that Kim at least fails to disclose, either expressly or implicitly, the claimed "the first electrodes are applied with the first voltage, **thereafter a third voltage is applied to the first electrodes different from the first and second voltages and a ground potential**, and thereafter the second voltage is applied to the first electrode, and the second electrodes are applied with the second voltage, **thereafter the third voltage**, and thereafter the first voltage," because, as discussed above, Kim merely discloses two voltages, Vs and -Vk.

New dependent claims 41-43 recite patentably distinguishing features of their own or are at least patentably distinguishing due to their dependence from the independent claims. Support for claim 41 can be found, for example, in FIG. 20. Support for claim 42 can be found, for example, in FIG. 22. Support for claim 43 can be found, for example, in FIGS. 20 and 22.

New claim 44 is directed to a driving device of a plasma display panel, including:

- a first power supply having negative polarity;
 - a second power supply having positive polarity;
 - a scan driver connected to the plural first electrodes respectively;
 - a first electrode common driver connected to the scan driver commonly; and
 - a second electrode common driver connected to the plural second electrodes commonly;
- wherein at a first timing for lightening the plural cells, drive current flows through a connection route of the second power

supply, the first electrode common driver, the scan driver, the first electrode, the cell, the second electrode, the second electrode common driver and the first power supply, and

at a second timing for lightening the plural cells, drive current flows through a connection route of the second power supply, the second electrode common driver, the second electrode, the cell, the first electrode, the scan driver, the first electrode common driver and the first power supply

Support for claim 44 can be found, for example, in the driving devices for FIGS. 3, 4B and 5B.

Applicants respectfully submit that neither Kim nor Iseki discloses, either expressly or inherently, the claimed “a scan driver connected to the plural first electrodes respectively; a first electrode common driver connected to the scan driver commonly; and a second electrode common driver connected to the plural second electrodes commonly; wherein at a first timing for lightening the plural cells, drive current flows through a connection route of the second power supply, the first electrode common driver, the scan driver, the first electrode, the cell, the second electrode, the second electrode common driver and the first power supply, and at a second timing for lightening the plural cells, drive current flows through a connection route of the second power supply, the second electrode common driver, the second electrode, the cell, the first electrode, the scan driver, the first electrode common driver and the first power supply,” as recited in claim 44. In other words, neither Kim nor Iseki expressly or implicitly discloses a driving device having a scan driver, a first electrode common driver, a second electrode common driver, wherein two connection routes for lightening the cells are established by the above drivers and the first and second voltages.

In a non-limiting example, in one embodiment of the present invention, transistors Q1 and Q2 and diodes D1 and D2 can correspond to a scan driver, the transistors Q3 and Q4 can correspond to Y common driver and the transistors Q5 and Q6 can correspond to X common driver, as shown in FIGS. 4B, 5B, 6B and 7B.

New dependent claims 45-51 recite patentably distinguishing features of their own or are at least patentably distinguishing due to their dependence from the independent claims.

Support for claim 45 can be found, for example, in the driving devices for FIG. 4B. Support for claim 46 can be found, for example, in the driving devices for FIG. 5B. Support for claim 47 can be found, for example, in the driving devices for FIGS. 6B and 7B. Support for claim 48 can be found, for example, in FIG. 6B. Support for claim 49 can be found, for example, in FIG. 7B. Support for claim 50 can be found, for example, in FIGS. 6B and 7B. Support for

claim 51 can be found, for example, in FIGS. 9, 11, 13, 15, 17, 19, 21 and 23 corresponding to Condenser C1.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

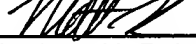
Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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